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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,904	12/11/2003	Perry C. Bates	BTO-103-B	8462

7590

11/23/2005

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EXAMINER

MCKANE, ELIZABETH L

ART UNIT

PAPER NUMBER

1744

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/733,904

Applicant(s)

BATES ET AL.

Examiner

Elizabeth L. McKane

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 031104, 012705.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, claim 19 attempts to further limit “the lower enclosed space” of claim 18. However, “the lower enclosed space” was only recited in claim 18 in terms of an intended use of the apparatus. Thus, attempting to further limit an element which has not been positively recited is improper.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wetzel (US 5,225,167, hereinafter "Wetzel '167") in view of Wetzel (US 5,987,908, hereinafter "Wetzel '908").

Wetzel '167 teaches a method for maintaining or improving indoor air quality wherein microorganisms are destroyed. The method entails creating a flow of air from an enclosed space with blower 20 (room in which apparatus is stationed) and treating the air in a germicidal fashion with ultraviolet light 19 at 254 nm. Afterwards the treated air is exhausted through 26,27 to a location outside of the structure 12. Wetzel '167 does not disclose that the method is effective to destroy fungi.

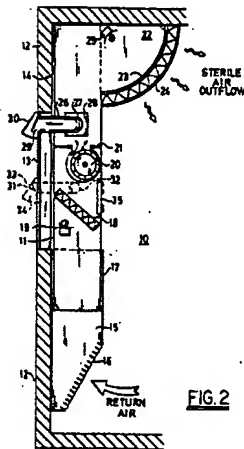


FIG. 2

Wetzel '908 evidences the known use of UV radiation for the destruction of mold (fungi) (col.4, lines 64-67). Thus, it would have been obvious to employ the method of Wetzel '167 of improving indoor air quality to improve indoor air contaminated with fungi, since UV radiation has been shown by Wetzel '908 to be effective in the destruction of fungi.

6. Claims 5, 10-12, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson (US 4,829,882) in view of Yoshida et al. (abstract of JP 2001-059282).

Jackson teaches a method of creating a flow of air from an lower enclosed space 68 to a location outside of the building. See col.1, lines 41-60. The flow of air is created by blower unit 44 having an air inlet 50 communicating with the enclosed space and the air outlet 52 communicating with the exterior of the building. See Figure 9. Jackson discloses that it is necessary to remove air from the enclosed space in order to discourage mold and mildew growth.

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See col.1, lines 13-23. Jackson fails to disclose treating the flow of air in a germicidal fashion before it enters the blower.

Yoshida et al. discloses a method of treating an area S underneath a floor 16 of a structure wherein the entire area is irradiated with UV lamps 40 while excess humidity is removed by a moisture adjusting material 32,34.

It would have been obvious to one of ordinary skill in the art to place the irradiators of Yoshida et al. within the crawl space of Jackson, since Yoshida et al. teaches that application of UV radiation prevents the growth of mold and bacteria within the space.

7. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson and Yoshida et al. as applied to claim 5 above, and further in view of Wetzel (US 5,225,167).

The combination of Jackson with Yoshida et al. results in placing UV lamps within the crawl space of Jackson such that as the air is moved and exhausted by the blower of Jackson, it will be irradiated by the lamps of Yoshida et al.. However, the combination does not teach creating a dedicated zone in which the lamps are positioned.

Wetzel '167 discloses an air treating apparatus including an enclosed space 10 having a killing zone 19 in the lower enclosed space 11. Air to be treated is passed through the killing zone in order to kill all microorganisms therein. As enclosing the air to be treated within the "killing zone" allows the radiation to be focused it would have been an obvious modification of the combination *supra*.

8. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson and Yoshida et al. as applied to claim 10 above, and further in view of Owesen (US 5,891,399).

With respect to claim 13, the combination of Jackson with Yoshida et al. fails to teach a

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means for detecting the presence of a human in the second enclosed space. Owesen, however, discloses that it was known in the art at the time of the invention to include in an air purifying system, an IR motion detector in order to detect the presence of a human or animal in the vicinity of UV radiators. See col.6, lines 24-31. As Owesen discloses that these detectors cut off current to the UV lamps when motion is detected, thereby preventing harm to humans or animals due to UV rays, they would have been an obvious addition to the system of Jackson with Yoshida et al..

As to claim 14, although neither Jackson nor Yoshida et al. teach particularly that the first enclosed space (human habitable) is "relatively conditioned," the Examiner submits that it was known in the art at the time of the invention to condition air in human dwellings, using air conditioners, fans, heaters, etc.. One of ordinary skill in the art would have found it obvious to condition the air in the dwellings of Jackson and Yoshida et al..

9. Claims 5-9, 18-24, and 32-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walkinshaw et al. (US 4,843,786) in view of Yoshida et al..

With respect to claims 5-9, 18, 19, 32, and 33, Walkinshaw et al. teaches a method of

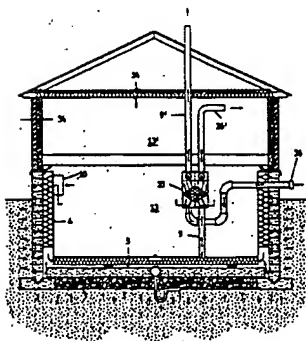


FIG. 4

maintaining a building free of fungi (col.2, lines 38-43) wherein a flow of air from a lower enclosed space 13 to a location outside of the building is created between composite walls 4 and exterior walls 1. A blower unit 35 proximate the floor of the upstairs living space 13' creates the air movement. The composite walls may include paneling 25. See Figure 3. This flow of air removes excess humidity and

moisture from the enclosed space. However, Walkinshaw et al. is silent with respect to treating the flow of air in a germicidal fashion.

Yoshida et al. discloses a method of treating an area S underneath a floor 16 of a structure wherein the entire area is irradiated with UV lamps 40 while excess humidity is removed by a moisture adjusting material 32,34. One of ordinary skill in the art would have found it obvious to place the irradiators of Yoshida et al. within the inter-wall air space of Walkinshaw et al., thereby creating a killing zone within the enclosed space, since Yoshida et al. teaches that application of UV radiation prevents the growth of mold and bacteria within the space, an outcome clearly taught by Walkinshaw et al..

As to claims 20, 21, and 34-36, the intake conduits of Walkinshaw et al. do not have the claimed configuration, but it is deemed obvious regardless to configure the conduits as desired and based upon the enclosed space dimensions. Such is readily determinable through routine experimentation by one of ordinary skill in the art and is not deemed to patentably distinguish the instant claims from the method and apparatus of the combination.

With respect to claims 22-24 and 37-39, as Yoshida et al. evidences the use of a plurality of UV lamps, it is deemed obvious to place one in each of the conduits of Walkinshaw et al. for the known effect of increasing exposure and kill of microorganisms to the UV radiation.

10. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walkinshaw et al. in view of Yoshida et al. as applied to claim 24 above, and further in view of Jackson.

While Walkinshaw et al. teaches the need to remove humidity from the lower enclosed space 13, a means for sensing the humidity therein is not disclosed, wherein the humidity sensor activates the blower unit. Jackson discloses multiple humidistats 90 which sense the humidity within lower enclosed space 68. When the humidity exceeds a predetermined level, humidity switches 88 close, enabling power to be supplied to the blower unit. See col.4, lines 60-65. As

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this arrangement assures removal of humid air from the enclosed space while preventing energy waste of the UV lamps, it would have been an obvious addition to the combination of Walkinshaw et al. with Yoshida et al..

11. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walkinshaw et al., Yoshida et al., and Jackson as applied to claim 25 above, and further in view of Owesen.

The combination *supra* fails to teach a means for detecting the presence of a human in the second enclosed space. Owesen, however, discloses that it was known in the art at the time of the invention to include in an air purifying system, an IR motion detector in order to detect the presence of a human or animal in the vicinity of UV radiators. See col.6, lines 24-31. As Owesen discloses that these detectors cut off current to the UV lamps when motion is detected, thereby preventing harm to humans or animals due to UV rays, they would have been an obvious addition to the apparatus of the combination.

### ***Conclusion***

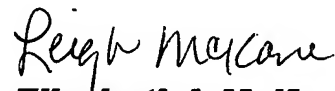
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth L. McKane whose telephone number is 571-272-1275. The examiner can normally be reached on Monday-Wednesday, 5:30 am - 2:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Elizabeth L McKane**  
**Primary Examiner**  
**Art Unit 1744**

elm  
19 November 2005